REMARKS

This amendment is responsive to the Office Action mailed December 28, 2007. Claims 1, 2, 4-7, and 9-17 have been amended, and Claim 8 has been canceled. New Claims 18-21 have been added. Accordingly, Claims 1, 2, 4-7, and 9-21 are pending in the application..

The Office Action rejected Claims 11-17 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Furthermore, Claims 11 and 15-17 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,134,246 to Cai et al. (hereinafter "Cai et al."). Claims 1, 2, 4-8, and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cai et al., in view of U.S. Patent No. 6,061,354, issued to Morikawa et al. (hereinafter "Morikawa et al."), and further in view of U.S. Patent No. 6,963,570, issued to Agarwal (hereinafter "Agarwal").[1] Claim 9 was rejected under 35 U.S.C. § 103(a) over Cai et al., in view of Morikawa et al. and Agarwal, in view of U.S. Patent No. 6,594,266, issued to Kim (hereinafter "Kim"), and in further view of U.S. Patent No. 6,590,909, issued to Stacey et al. (hereinafter "Stacey et al."). Claims 12-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Cai et al., in view of U.S. Patent No. 6,339,488, issued to Beshai (hereinafter "Beshai").

Applicants respectfully request withdrawal of the above-identified rejections and allowance of the pending claims.

Claim Rejections Under 35 U.S.C § 112, Second Paragraph

Claims 11-17 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Specifically, the Office Action noted that Claim 11, line 2, recites "at least one low-bit-rate artery," whereas line 9 of the claim recites "the one low-bit-rate artery." To remedy

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[1] The body of the rejection of Claims 1, 2, 4-8, and 10 also referenced U.S. Patent No. 6,594,266, issued to Kim.

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the concern, Claim 11 has been amended to recite, in line 2, "a low-bit-rate artery," and in line 9, "the low-bit-rate artery." Use of the indefinite article "a" in Claim 11 does not exclude more than one low-bit-rate artery. Claim 15 has been amended to recite "the one or more low-bit-rate arteries," which has antecedent basis in the claim.

Applicants respectfully submit that Claims 11 and 15, as amended, satisfy the requirements of 35 U.S.C. § 112, second paragraph, and request that the rejection be withdrawn.

Claim Rejections Under 35 U.S.C § 102

Claims 11 and 15-17 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Cai et al.

Claim 11, as amended, reads as follows:

> 11. An apparatus for data transmission between an originating terminal and a terminating terminal in a communications network comprising at least one low-bit-rate artery and at least one standard-bit-rate artery, wherein the apparatus comprises:
> a multiplexer device having a packetization function and a switching function, wherein the switching function of the multiplexer device is configured to switch packets transmitted in basic transmission units according to an adaptation layer protocol among several virtual lines constituted by connections in multiplexed or non-multiplexed mode, wherein data transmitted on the at least one standard-bit-rate artery is multiplexed onto the at least one low-bit-rate artery; and
> an adaptation unit associated with the terminating terminal, wherein the adaptation unit is configured to:
> extract the packets from the basic transmission units;
> determine whether any packet in the basic transmission units has been lost; and
> extract the data from the packets.

Applicants respectfully submit that Claim 11, as amended, is not anticipated by Cai et al., because Cai et al. fails to teach, disclose, or suggest the recitations of Claim 11. For example, it is not readily shown in Cai et al. that data transmitted on at least one standard-bit-rate artery is multiplexed onto at least one low-bit-rate artery, as claimed, notwithstanding the disclosure in Figures 4 and 5 of Cai et al. Additionally, Cai et al. does not disclose "an adaptation unit

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associated with the terminating terminal, wherein the adaptation unit is configured to: extract the packets from the basic transmission units; determine whether any packet in the basic transmission units has been lost; and extract the data from the packets," as claimed. For at least these reasons, Claim 11 is not anticipated by Cai et al.

Claim 15 has been amended to recite as follows:

> 15.   A network configured to convey data between at least two terminals, the network comprising:
> one or more low-bit-rate arteries;
> one or more standard-bit-rate arteries;
> a multiplexer device having a packetization function and a switching function, wherein the switching function of the multiplexer device is configured to switch packets transmitted in basic transmission units among several virtual lines constituted by connections in multiplexed or non-multiplexed mode, wherein data transmitted on the one or more standard-bit-rate arteries is multiplexed onto the one or more low-bit-rate arteries, and wherein at least one multiplexer device is positioned upstream to and downstream from a data transmission on a low-bit-rate artery; and
> a device associated with the terminating terminal, wherein the device is configured to extract the packets from the basic transmission units, determine whether any packet has been lost, and extract the data from the packets.

Applicants respectfully submit that Claim 15 is not anticipated by Cai et al. because Cai et al. fails to teach, disclose, or suggest all of the recitations of Claim 15. For example, Claim 15 recites "at least one multiplexer device [that] is positioned upstream to and downstream from a data transmission on a low-bit-rate artery," which is not taught in Cai et al. Additionally, as with Claim 11, Claim 15 recites "data transmitted on the one or more standard-bit-rate arteries is multiplexed onto the one or more low-bit-rate arteries," which is not taught in Cai et al. Applicants further submit that Cai et al. does teach "a device associated with the terminating terminal, wherein the device is configured to extract the packets from the basic transmission units, determine whether any packet has been lost, and extract the data from the packets," as claimed. For at least these reasons, Claim 15 is submitted to be allowable over Cai et al.

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Because Claims 16 and 17 depend from Claim 15, they are submitted to be allowable for at least the same reasons as Claim 15.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1, 2, 4-8, and 10 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Cai et al., in view of Morikawa et al. and Agarwal.[2]

Claim 1, as amended, reads as follows:

> 1. A method for conveying data between terminals in a communications network comprising at least one low-bit-rate artery and at least one standard-bit-rate artery, the data to be transmitted taking the form of packets having a size smaller than the size of a basic transmission unit, the method comprising:
>
> receiving, from a first originating terminal at an adaptation unit of a first switch in the communications network, data according to a first protocol;
>
> converting the received data into coded frames using a compression algorithm;
>
> forming a packet of application data according to a second protocol, the packet of application data comprising a plurality of the coded frames;
>
> forming a Common Part Sublayer packet comprising the packet of application data and a Common Part Sublayer header including information required by at least one of the first or second protocols;
>
> inserting the Common Part Sublayer packet into a first basic transmission unit at a rate of one packet per unit for transmission to a first end of the low-bit-rate artery;
>
>> *at the first end of the low-bit-rate artery*:
>>
>>> extracting the Common Part Sublayer packets from the first basic transmission units and from basic transmission units received from different originating terminals;
>>>
>>> multiplexing the extracted Common Part Sublayer packets into a second basic transmission unit for transmission to a second end of the low-bit-rate artery; and
>>>
>>> sending the second basic transmission unit from the first end to the second end of the low-bit-rate artery;
>>
>> *at the second end of the low-bit-rate artery*:

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[2] The body of the rejection of Claims 1, 2, 4-8, and 10 also referenced U.S. Patent No. 6,594,266, issued to Kim.

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receiving the second basic transmission unit;

extracting the Common Part Sublayer packets from the second basic transmission unit;

determining the terminating terminal to which each of the Common Part Sublayer packets belong and inserting each of the determined Common Part Sublayer packets into a third basic transmission unit at a rate of one packet per unit; and

sending the third basic transmission unit from the second end of the low-bit-rate artery to an adaptation unit of a second switch in the communications network to which the terminating terminal is assigned; and

at the adaptation unit of the second switch:

extracting the Common Part Sublayer packet from each third basic transmission unit;

determining the address of the terminating terminal;

determining whether any Common Part Sublayer packet has been lost;

extracting the coded frames from the packet of application data; and

decompressing the coded frames to recreate the data from the originating terminal.

Applicants respectfully submit that Claim 1, as amended, is allowable over Cai et al., taken alone or in combination with Morikawa et al., Agarwal, and Kim. The above references, alone or in combination, fail to teach, disclose, or suggest all of the recitations of amended Claim 1, including, for example, the method elements performed at the first and second ends of the low-bit-rate artery (presented following the italics above). For at least these reasons, Claim 1, as amended, is submitted to be allowable over Cai et al., in view of Morikawa et al., Agarwal and Kim. Because Claims 2, 4-8, and 10 depend from Claim 1, they are submitted to be allowable for at least the same reasons as Claim 1.

Claim 9 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Cai et al., Morikawa et al., Agarwal, Kim, and further in view of Stacey et al. Because Claim 9 depends from Claim 1, which is submitted to be allowable, Claim 9 is submitted to be allowable for at least the same reasons as Claim 1. Stacey et al. does not make up for the deficiencies of Cai et al., Morikawa et al., Agarwal, and Kim, as discussed in regard to Claim 1.

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Claims 12-14 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Cai et al., in view of Beshai et al. Because Claims 12-14 depend from Claim 11, which is submitted to be allowable, Claims 12-14 are submitted to be allowable for at least the same reasons as Claim 11. Beshai et al. does not make up for the deficiencies of Cai et al. discussed in relation to Claim 11.

New Claims18-21

New Claims 18 and 19 depend from Claim 1, and are allowable over the cited art. Likewise, new Claims 20 and 21 depend from Claims 11 and 15, respectively, and are submitted to be allowable over the cited art. Support for the newly claimed subject matter is found in the application as filed.

CONCLUSION

In view of the foregoing amendments and remarks, applicants submit that the above-identified patent application is in condition for allowance. Reconsideration of the application and allowance of the claims at an early date are solicited. If the Examiner has any questions or comments concerning this matter, he is invited to contact the undersigned counsel at the number provided below.

Respectfully submitted,

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